Nutritional Influences on Illness
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Vitamin B₁₂ in the Treatment of Liver Disease

Several diseases of the liver, such as acute hepatitis, cirrhosis, hepatocellular carcinoma, and metastatic liver disease, may be accompanied by an increase in circulating cobalamin (vitamin B₁₂) levels.¹ Elevation of vitamin B₁₂ in the circulation is accompanied by an increase in B₁₂ carriers (holotranscobalamins).²,³ These findings are in contrast to liver tissue, within which total vitamin B₁₂ and holotranscobalamin concentrations are low.²,³ Thus, normal or high blood vitamin B₁₂ concentrations in patients with liver disease often mask a low level of the vitamin in the hepatic tissue and may serve as an indicator of the severity of disease. This increase in blood level is so reliable that serum hepatic enzyme concentrations have been shown to positively correlate with vitamin B₁₂ levels.⁴

In one study, for example, elevated blood serum levels of free vitamin B₁₂, conforming to the disease severity and stage, were found in 168 patients with viral hepatitis A, 13 patients with chronic active hepatitis, and eight patients with mechanical jaundice of neoplastic origin with liver involvement, and the level of cobalaminemia correlated with the results of various functional liver tests.⁵ Moreover, another study of 320 patients with alcoholic hepatitis found that plasma vitamin B₁₂ levels rose as death approached.⁶

Supplementation
Findings of several studies suggest that, despite the elevated cobalamin level in the blood, injections of vitamin B₁₂ may be beneficial. Back in 1952, a controlled study of patients with viral hepatitis found that intravenous administration of the vitamin resulted in a rapid reduction of liver size to normal along with the return of appetite. In addition, the serum bilirubin normalized earlier (in ten weeks compared to 18 weeks in the control group), and the mean duration of illness was reduced from 54 to 48 days.⁷

Three years later, the same researchers added folic acid to the experimental regimen and performed a similar study. Two matched groups of 44 patients with acute viral hepatitis were provided with a high-protein, high-carbohydrate, moderate-fat diet. In addition, the experimental group received 30 mcg vitamin B₁₂ IM every other day, along with 5 mg of folic acid orally three times daily for the first ten days of hospitalization. The mean duration of illness of the experimental group was reduced to 47.5 days as compared to 57.2 days for controls. The difference was most marked when total serum bilirubin was greater than 15 mg/100cc (a difference of 17.2 days), but was appreciable at about ten days in those groups where total serum bilirubin was 5 to 10 mg.
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While the total serum bilirubins of the entire experimental group were normal after the 11th week, 18 weeks were required by the control group. Moreover, the bromsulphalein values of the experimental group all became normal by the 11th week, compared to 17 weeks in the control group. Finally, as in their earlier study, the patients in the experimental group had a more rapid return of normal appetite.8

Five years after the results of that study were published, half of a group of 26 patients with viral hepatitis were selected alternately to receive vitamin B12 100 mcg intravenously daily in addition to standard treatment. While liver function tests were unmodified, the experimental group had less anorexia and jaundice, and the mean duration of illness was 34.8 days compared to 45.8 days in the controls.9 Similar results were reported in 1969, when another group of patients with acute viral hepatitis were treated with 100 mcg of vitamin B12 intramuscularly four times daily.9

As is so often the case in nutritional medical research, almost forty years later, these exciting reports of successful intervention have not fostered further exploration of the utilization of vitamin B12 in treating liver disease. This is despite the fact that administration of the vitamin produced no adverse effects and that every one of these four studies reported positive results. More and better studies are needed; however, given what we know about the efficacy and safety of the vitamin, why not include injections of vitamin B12 as an adjunct in the treatment of liver disease?

Notes

Much more information on the role of nutritional factors in illness can be found in Foundations of Nutritional Medicine, one of Dr. Werbach's internationally acclaimed Sourcebooks of Clinical Research. A free brochure describing all of his books is available from Third Line Press, 4751 Viviana Drive, Tarzana, California 91356; 800-916-0076; 818-996-0076; FAX: 818-774-1575; tlp@third-line.com; http://www.third-line.com.